CD72 nanoCARs for the treatment of refractory pediatric B-cell acute lymphoblastic leukemia

Grant Award Details

CD72 nanoCARs for the treatment of refractory pediatric B-cell acute lymphoblastic leukemia

Grant Type: Therapeutic Translational Research Projects

Grant Number: TRAN1-12987

Project Objective: To conduct a well-prepared pre-IND meeting with FDA for a CD72 targeted nanoCAR in treatment of refractory pediatric B-ALL.

Investigator:

Name:	Arun Wiita
Institution:	University of California, San Francisco
Type:	PI

Disease Focus: B cell cancers, Blood Cancer, Cancer

Human Stem Cell Use: Somatic Cell

Award Value: $3,330,801

Status: Pre-Active

Grant Application Details

Application Title: CD72 nanoCARs for the treatment of refractory pediatric B-cell acute lymphoblastic leukemia

Public Abstract:

Translational Candidate

CD72-targeting chimeric antigen receptor (CAR) T cells incorporating fully synthetic nanobodies

Area of Impact

Pediatric B-cell acute lymphoblastic leukemia refractory to currently available treatments without other potentially curative options

Mechanism of Action

The proposed candidate functions as Chimeric Antigen Receptor (CAR) T cell. When the CAR-T cell recognizes tumor cell expressing the designed target, CD72, they are activated and lyse the tumor cell. These "living drugs" can potentially multiply and persist within the body to eliminate tumor cells for long periods of time, or even lead to cures in patients with previously dire outcomes.

Unmet Medical Need

Children and young adults with B-cell acute lymphoblastic leukemia who relapse on available therapeutics need new options for survival. Our therapy aims to address this unmet need through a newly-discovered target and new type of cellular design.

Project Objective

Pre-IND meeting

Major Proposed Activities

- Process development for manufacturing of CD72 nanoCAR T-cells.
- In vitro and in vivo studies to determine preclinical efficacy and safety of the therapeutic candidate.
- Development of the validated CD72 assay, clinical trial protocol, consent form and clinical SOPs.

Statement of Benefit to California:

The goal of our project is to develop a new therapy for pediatric cancer patients who currently have no other good options. We anticipate this therapy would potentially benefit dozens of children per year in California. Furthermore, successful development of this therapy under the goals of this CIRM award could open its use to an even broader set of children and adults with cancers the express our target of interest, potentially impacting hundreds of individuals per year in our State.
